

WHAT IS CLAIMED IS:

*Sub a1*

1. A method for decompressing a compressed data stream whose decoded output comprises lines of two-dimensional data, comprising:
  - 3 receiving a compressed data stream;
  - 4 receiving at least one pointer to a location in the compressed data stream whose decoded output comprises a location on a line of data;
  - 6 receiving decoding information for each received pointer that enables decoding from a point within the compressed data stream addressed by the pointer in one reentry data set;
  - 9 for each received pointer, performing:
    - 10 (i) accessing the location in the compressed data stream addressed by the received pointer; and
    - 12 (ii) using the received decoding information to decode compressed data from the accessed location.
- 1 2. The method of claim 1, wherein the decoded output comprises image data.
- 1 3. The method of claim 1, further comprising:
  - 2 buffering the decoded data; and
  - 3 outputting the buffered decoded data.
- 1 4. The method of claim 3, wherein the buffered decoded data generated comprises a data section having a line width that is less than a line width of the decoded input compressed data stream.

1           5.     The method of claim 1, wherein the received pointer and decoding  
2 information are included in a reentry data set.

1           6.     The method of claim 5, further comprising:  
2     generating the reentry data sets when decoding an input compressed data stream;  
3     and  
4     outputting an output compressed data stream that comprises the compressed data  
5     decoded using the reentry data sets.

1           7.     The method of claim 6, wherein the input and output compressed data  
2 streams are identical.

1           8.     The method of claim 6, wherein the input compressed data stream includes  
2 more data than the output compressed data stream.

1           9.     The method of claim 6, wherein the reentry data sets are generated by a  
2 reentry decoder that decodes the input compressed data stream and passes each reentry  
3 data set and the output compressed data stream to a decoder to decode the output  
4 compressed data stream using the reentry data sets.

1           10.    The method of claim 1, wherein the reentry data sets are generated by an  
2 encoder when encoding the compressed data stream.

1           11.    The method of claim 1, further comprising using previously decoded data to  
2 decode the compressed data stream.

TOP SECRET//COMINT

1 12. The method of claim 11, wherein the previously decoded data used to  
2 decode the compressed data stream is included in the reentry data sets.

1           13. The method of claim 11, wherein the previously decoded data is generated  
2 when decoding the compressed data stream using the reentry data sets.

1           14. The method of claim 13, wherein additional previously decoded data in the  
2 reentry data set is also used to decode the compressed data stream.

1        15. The method of claim 11, wherein the decoding information includes  
2 probability estimates used to decode the compressed data stream at the location addressed  
3 by the pointer.

1 16. The method of claim 15, wherein the data is decoded using an Adaptive Bi-  
2 Level Image Compression (ABIC) algorithm.

1        17. The method of claim 11, wherein decoding begins from the location in the  
2 compressed data stream addressed by the pointer in a first reentry data set, wherein the  
3 first reentry data set further includes all the previously decoded data needed to decode from  
4 the pointer in the first reentry data set to generate as output a first line of data.

1           18. The method of claim 17, wherein for each reentry data set following the first  
2 reentry data set, further comprising using previously decoded data generated using another  
3 reentry data set.

四庫全書

1           19.    The method of claim 18, wherein each reentry data set following the first  
2    reentry data set further includes previously decoded data to use when decoding from the  
3    location in the compressed data stream addressed by the pointer in the reentry data set.

1           20.    The method of claim 11, wherein the previously decoded data used to  
2    decode the compressed data stream comprises a set of nearest neighbor bit values to the  
3    bit value generated by decoding the location in the compressed data stream addressed by  
  the pointer.

1           21.    The method of claim 1, further comprising:  
2            receiving multiple pointers to different sections of the compressed data stream and  
3    receiving decoding information for each received pointer; and  
4            sequentially decoding a portion of each section of the compressed data stream  
5    beginning at the location in the compressed data stream addressed by one of the pointers  
6    using the decoding information for the pointer.

1           22.    A system for decompressing a compressed data stream whose decoded  
2    output comprises lines of two-dimensional data, comprising:  
3            a computer readable medium including:  
4              (i) a compressed data stream;  
5              (ii) at least one pointer to a location in the compressed data stream whose  
6    decoded output comprises a location on a line of data;  
7              (iii) decoding information for each received pointer that enables decoding  
8    from a point within the compressed data stream addressed by the pointer in one  
9    reentry data set;

TOP SECRET//  
EYES ONLY//  
NOFORN//  
REF ID: A6490150

10 means for accessing the location in the compressed data stream in the computer  
11 readable medium addressed by the received pointer; and  
12 means for using the decoding information in the computer readable medium to  
13 decode compressed data from the accessed location.

1 23. The system of claim 22, wherein the decoded output comprises image data.

1 24. The system of claim 22, further comprising:  
2 means for buffering the decoded data; and  
3 means for outputting the buffered decoded data.

1 25. The system of claim 24, wherein the buffered decoded data generated  
2 comprises a data section having a line width that is less than a line width of the decoded  
3 input compressed data stream.

1 26. The system of claim 22, wherein the computer readable medium further  
2 includes reentry data sets, wherein each reentry data set includes one pointer and the  
3 decoding information for the pointer.

1 27. The system of claim 26, further comprising:  
2 means for generating the reentry data sets when decoding an input compressed data  
3 stream; and  
4 means for outputting an output compressed data stream that comprises the  
5 compressed data decoded using the reentry data sets.

1 23. The system of claim 22, wherein the decoded output comprises image data.  
2 24. The system of claim 22, further comprising:  
3 means for buffering the decoded data; and  
4 means for outputting the buffered decoded data.  
5 25. The system of claim 24, wherein the buffered decoded data generated  
6 comprises a data section having a line width that is less than a line width of the decoded  
7 input compressed data stream.  
8 26. The system of claim 22, wherein the computer readable medium further  
9 includes reentry data sets, wherein each reentry data set includes one pointer and the  
10 decoding information for the pointer.  
11 27. The system of claim 26, further comprising:  
12 means for generating the reentry data sets when decoding an input compressed data  
13 stream; and  
14 means for outputting an output compressed data stream that comprises the  
15 compressed data decoded using the reentry data sets.

1        28.    The system of claim 27, wherein the input and output compressed data  
2 streams are identical.

1        29.    The system of claim 27, wherein the input compressed data stream includes  
2 more data than the output compressed data stream.

1        30.    The system of claim 27, further comprising:  
2            a reentry decoder for generating the reentry by decoding the input compressed  
3 data stream and transmitting each reentry data set and the output compressed data;  
4            a decoder for receiving the transmitted reentry data set and decoding the output  
5 compressed data stream using the reentry data sets.

1        31.    The system of claim 22, further comprising:  
2            an encoder for generating the reentry data sets when encoding the compressed data  
3 stream.

1        32.    The system of claim 22, further comprising means for using previously  
2 decoded data to decode the compressed data stream.

1        33.    The system of claim 32, wherein the previously decoded data used to  
2 decode the compressed data stream is included in the reentry data sets.

1        34.    The system of claim 32, wherein the previously decoded data is generated  
2 when decoding the compressed data stream using the reentry data sets.

1           35. The system of claim 34, wherein additional previously decoded data in the  
2 reentry data set is also used to decode the compressed data stream.

1           36. The system of claim 32, wherein the decoding information includes  
2 probability estimates used to decode the compressed data stream at the location addressed  
3 by the pointer.

1           37. The system of claim 32, wherein decoding begins from the location in the  
2 compressed data stream addressed by the pointer in a first reentry data set, wherein the  
3 first reentry data set further includes all the previously decoded data needed to decode from  
4 the pointer in the first reentry data set to generate as output a first line of data.

1           38. The system of claim 37, further comprising means for using previously  
2 decoded data generated using another reentry data set for each reentry data set following  
3 the first reentry data set, further comprising.

1           39. The system of claim 38, wherein each reentry data set following the first  
2 reentry data set further includes previously decoded data to use when decoding from the  
3 location in the compressed data stream addressed by the pointer in the reentry data set.

1           40. The method of claim 32, wherein the previously decoded data used to  
2 decode the compressed data stream comprises a set of nearest neighbor bit values to the  
3 bit value generated by decoding the location in the compressed data stream addressed by  
the pointer.

DRAFT - FEB 2002

1           41. The method of claim 1, wherein the computer readable medium further  
2 concludes multiple pointers to different sections of the compressed data stream and  
3 decoding information for each pointer; and  
4           means for sequentially decoding a portion of each section of the compressed data  
5 stream beginning at the location in the compressed data stream addressed by one of the  
points using the decoding information for the pointer.

1           42. An article of manufacture for decompressing a compressed data stream  
2 whose decoded output comprises lines of two-dimensional data, wherein the article of  
3 manufacture includes program logic performing:  
4           receiving a compressed data stream;  
5           receiving at least one pointer to a location in the compressed data stream whose  
6 decoded output comprises a location on a line of data;  
7           receiving decoding information for each received pointer that enables decoding  
8 from a point within the compressed data stream addressed by the pointer in one reentry  
9 data set;  
10          for each received pointer, performing:  
11            (i) accessing the location in the compressed data stream addressed by the  
12 received pointer; and  
13            (ii) using the received decoding information to decode compressed data  
14 from the accessed location.

1           43. The article of manufacture of claim 42, wherein the decoded output  
2 comprises image data.

CONFIDENTIAL

1           44. The article of manufacture of claim 42, wherein the program logic further  
2 performs:  
3           buffering the decoded data; and  
4           outputting the buffered decoded data.

1           45. The article of manufacture of claim 44, wherein the buffered decoded data  
2 generated comprises a data section having a line width that is less than a line width of the  
3 decoded input compressed data stream.

1           46. The article of manufacture of claim 42, wherein the received pointer and  
2 decoding information are included in a reentry data set.

1           47. The article of manufacture of claim 46, wherein the program logic further  
2 performs:  
3           generating the reentry data sets when decoding an input compressed data stream;  
4           and  
5           outputting an output compressed data stream that comprises the compressed data  
6           decoded using the reentry data sets.

1           48. The article of manufacture of claim 47, wherein the input and output  
2 compressed data streams are identical.

1           49. The article of manufacture of claim 47, wherein the input compressed data  
2 stream includes more data than the output compressed data stream.

1           50.    The article of manufacture of claim 47, wherein the reentry data sets are  
2 generated by a reentry decoder that decodes the input compressed data stream and passes  
3 each reentry data set and the output compressed data stream to a decoder to decode the  
4 output compressed data stream using the reentry data sets.

1           51.    The article of manufacture of claim 42, wherein the reentry data sets are  
2 generated by an encoder when encoding the compressed data stream.

1           52.    The article of manufacture of claim 42, wherein the program logic further  
2 performs using previously decoded data to decode the compressed data stream.

1           53.    The article of manufacture of claim 52, wherein the previously decoded  
2 data used to decode the compressed data stream is included in the reentry data sets.

1           54.    The article of manufacture of claim 52, wherein the previously decoded  
2 data is generated when decoding the compressed data stream using the reentry data sets.

1           55.    The article of manufacture of claim 54, wherein additional previously  
2 decoded data in the reentry data set is also used to decode the compressed data stream.

1           56.    The article of manufacture of claim 52, wherein the decoding information  
2 includes probability estimates used to decode the compressed data stream at the location  
3 addressed by the pointer.

1           57.    The article of manufacture of claim 56, wherein the data is decoded using  
2 an Adaptive Bi-Level Image Compression (ABIC) algorithm.

1           58.    The article of manufacture of claim 52, wherein decoding begins from the  
2 location in the compressed data stream addressed by the pointer in a first reentry data set,  
3 wherein the first reentry data set further includes all the previously decoded data needed to  
4 decode from the pointer in the first reentry data set to generate as output a first line of data.

1           59.    The article of manufacture of claim 58, wherein for each reentry data set  
2 following the first reentry data set, further comprising using previously decoded data  
3 generated using another reentry data set.

1           60.    The article of manufacture of claim 59, wherein each reentry data set  
2 following the first reentry data set further includes previously decoded data to use when  
3 decoding from the location in the compressed data stream addressed by the pointer in the  
4 reentry data set.

1           61.    The article of manufacture of claim 52, wherein the previously decoded  
2 data used to decode the compressed data stream comprises a set of nearest neighbor bit  
3 values to the bit value generated by decoding the location in the compressed data stream  
addressed by the pointer.

1           62.    The article of manufacture of claim 42, wherein the program logic further  
2 performs:  
3           receiving multiple pointers to different sections of the compressed data stream and  
4           receiving decoding information for each received pointer; and

TRANSMISSION

- 5 sequentially decoding a portion of each section of the compressed data stream
- 6 beginning at the location in the compressed data stream addressed by one of the pointers
- 7 using the decoding information for the pointer.